

REMARKS

The application includes claims 1-18 prior to entering this amendment. Claims 19-22 have been added. The application remains with claims 1-22 after entering this amendment. The applicants do not add new matter and request reconsideration.

Claim Objections

The examiner objected to claim 11 for having an extra “and” at the end of line 2. Claim 11 has been amended as requested by the Examiner.

Claim Rejections - 35 U.S.C. § 112

The examiner rejected claims 8 and 15 under 35 U.S.C. § 112 for having insufficient antecedent basis. Claims 8 and 15 have been amended as suggested by the Examiner.

Claim Rejections - 35 U.S.C. § 102

The examiner rejected claims 1-8, 11-15, 17, and 18 under 35 U.S.C. § 102(b) as being unpatentable over Li (U.S. Patent 6,480,843).

Claim Rejections - 35 U.S.C. § 103

The examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Ho (U.S. Patent 5,884,302).

The examiner rejected claims 10 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Wakefield, *et al.* (U.S. Patent Application Publication 2004/0167870).

Claim 1 has been amended to recite:

an ontology based concept repository configured to link a plurality of concepts at multiple different concept domain layers, wherein the concepts associated with the different domain layers are represented by one or more natural language words and the concepts for higher concept domain layers are represented by one or more natural language words having more specific terms than the one or more natural language words representing the concepts associated with the lower domain layers.

This is clearly supported throughout the specification and drawings, for example, FIGS. 1-3 and paragraphs [0014-0057] describe an ontology based concept repository configured with concepts on multiple different domain layers.

Conversely, Li uses a symbolic entity, such as **sem1**, to represent similar terms (col. 6, lines 65-67). Li uses these symbolic labels to represent a higher concept for words having similar syntactic or semantic relationships (col. 7, lines 18-25).

The concepts in Li are represented by numbers (i.e., concept #=sem; FIGS. 3A and 4C), *not natural language words having more specific terms than the natural language words representing the concepts associated with the lower domain layers as also recited in claim 1.*

The symbolic entity **sem1** is not a natural language word and therefore cannot relay any natural language meaning other than serving an arbitrary number assigned to all of the related words car, auto, automobile, and sedan (FIG. 3A). Since a symbolic entity, such as **sem1**, is used in Li to associate similar terms (FIG. 3A; col. 6, lines 65-67), there is no way to associate the symbolic entity **sem1** with more specific and less specify natural language words for concepts residing in other concept domain layers.

Refer further to FIG. 4C in Li where the symbolic entity **sem1** and the word **Buick** are each associated with the same symbol Syn1'. There is no natural language word at a first concept domain layer that represents all of the words **Car, auto, automobile, and sedan** and another natural language word at a second concept domain layer that represents more specific terms, such as **Buick**. Li prevents this multi-domain concept layer association because natural language words are not used to represent the concepts associated with different concept domain layers.

Regarding claim 2, neither Li or Ho suggest *concepts classified as a noun, verb, adjective or adverb*. Ho describes a system that analyzes the grammatical structure of the natural-language question (col. 2, lines 9-13). However, this grammatical analysis is not used with concepts as recited in claim 2. Further, it would not make any sense to use the grammatical structure analysis in Ho with the symbolic entities **sem1** in Li. As explained above, the symbolic entities used for identifying concepts in Li are numbers, not natural language words. Accordingly, grammatical analysis of symbolic entities would not work.

Claim 3 recites: *at least some of the plurality of concepts are further defined as a rigid phrase that is matched by any punctuation and/or inflectional variant of the rigid phrase, or*

defined as a compositional phrase that includes a set of multiple terms that are matched by other concepts that contain all of the multiple terms contained in the set.

For similar reasons explained above, the concepts in Li are associated with a symbols, not natural language words. It would not make sense use rigid phrases or compositional phrases to define the symbols in Li, since the symbols in Li do not have rigid phrases or compositional phrases.

Claims 4 and 6 further recite elements of the multiple domain layers of the natural language ontology recited in claim 1. It follows that these elements are also not suggested in Li, since Li does not even suggest using natural language words for representing concepts.

Accordingly, claims 1, 2, 3, 4, and 5 are all separately patentable under 35 U.S.C. § 102(b) over Li and also patentable under 35 U.S.C. § 103(a) over Li in view of Ho.

Claims 8 and 15 include at least some element similar to claim 1 and are therefore patentable for at least some of the same reasons.


Conclusion

For the foregoing reasons, the applicants request reconsideration and allowance of claims 1-22. The applicants encourage the examiner to telephone the undersigned if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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